funds. The more widely its aims are known the greater the chances of this station receiving the support which it deserves. For deserve it, it does. When hard-headed, hard-working, practical men band themselves together and put their energies and money into the establishment of a research station, and particularly when these men are Englishmen, they deserve no less support than is given to a polar expedition or a football cup-final. Fortunately, this enterprise, due in the first place to the initiative of the Lea Valley and District Nurserymen's and Growers' Association, and also, as we believe, to the persuasive enthusiasm of Dr. Russell, of Rothamsted, has received a generous measure of support from the Board of Agriculture, from the Hertfordshire and the Essex County Councils, and from the Duke of Bedford. With the funds thus obtained laboratories and experimental glasshouses have been built at an outlay of 3278*l.*, of which sum all but 650*l.* has been paid.

A brief account of the preliminary researches carried out during 1915 will serve to indicate what a number of problems of practical importance emerge so soon as the searchlight of investigation is turned on an industry. As a preliminary to the investigation of yields of tomatoes, the soil of the five houses built for the cultivation of this crop was standardised. The soil in each house received the same amounts of lime, straw-manure, and bone-meal, and also similar treatment with respect to mulching, top-dressing, watering, etc. Fifteen varieties of tomato were grown in each of the five houses. Yet in spite of the similarity of soil conditions and of plants, the yields from the houses varied very considerably. House No. 2 stood highest with 3 tons 19 cwt. of fruit, and house No. 5 lowest with 3 tons 6 cwt.; in each case from 918 plants. Is this difference, which amounts to about 16 per cent., to be accounted for on the basis of experimental error, or is it to be attributed to some varying factor, such as the seed? In other words, would the isolation of pure lines of tomatoes help to bring the lower nearer to the higher yield? We have no doubt but that it would; but evidently the last word must lie with experiment.

Tests with humogen carried out with tomatoes and cucumbers offer no ground for the hope that this material is destined to replace manure or reduce cost of production. As with the experiments at Wisley and elsewhere, so here; the addition of humogen led to little or no increase in the crop, and the present writer is steadily inclining to the opinion that the remarkable results obtained at Kew were due to the accidental admixture of some fertiliser—presumably a phosphate—with the humogen which produced those results.

Very interesting are the results recorded in the report of observations on the yield of cucumbers from the slightly warmer and slightly cooler halves of four houses. In each case the part of the house nearer the boiler, and hence appreciably warmer, gave a lower yield. Anyone who has experienced the tropical warmth of a cucumber house must have felt that it was too much of a good thing. It looks as though the plants feel this too, and that a little rest from intensive speeding up of production is no less beneficial to them than to other living things. The director, Mr. A. B. Lister, is to be congratulated on the excellent start that he has made. He has a fine opportunity, and we feel sure that he will use it to the best advantage of the society which has had the enterprise and faith to harness science to the market cart. They will remember, however, that she is slow-moving, not showy, expensive to keep, and, above all, needs to be given her head.

F. K.

NOTES.

IT is announced that the Government has decided to send an expedition to the Antarctic to relieve Sir Ernest Shackleton. The failure of the *Endurance* to put in an appearance gives cause for considerable anxiety; and while it is not impossible that she may still return unaided, no time can be wasted in organising relief. The arrangements for the expedition are to be put in the care of a small committee of polar experts, which is now being formed. Among those who will probably be asked to give their advice are Dr. W. S. Bruce, who is almost the only explorer in this country who knows the Weddell Sea, and Sir Douglas Mawson. Capt. J. K. Davis, who was recently in London on a short visit, has already been consulted. The choice of a ship will be difficult, as there are very few vessels in existence which are suitable for navigation in the Weddell Sea. In all probability the *Aurora*, despite the damage she has sustained, can be refitted and sent to the Ross Sea to fetch Capt. Macintosh and his comrades, who were left ashore in Erebus Gulf. Mr. Stenhouse, who brought the *Aurora* to New Zealand, is now on his way to this country.

A BRONZE memorial tablet to the memory of Capt. Scott and his companions, who perished on their return journey from the South Pole, has been placed in St. Paul's Cathedral. The memorial takes the form of a medallion portrait of Capt. Scott and a relief panel of the polar party on the march. It is surmounted by three allegorical figures—Discipline, Glory, and Courage. The tablet is the work of Mr. S. N. Babb, and is part of the national memorial scheme to the lost explorers, for which funds were collected when the news of the disaster became known. The inscription reads:—"In memory of Captain Robert Falcon Scott, C.V.O., R.N., Dr. Edward Adrian Wilson, Captain Lawrence Edward Grace Oates, Lieut. Henry Robertson Bowers, and Petty Officer Edgar Evans, who died on their return journey from the South Pole in February and March, 1912. Inflexible of purpose—steadfast in courage—resolute in endurance in the face of unparalleled misfortune—their bodies are lost in the Antarctic Ice—but the memory of their deeds is an everlasting monument." Mr. Asquith, in unveiling the memorial last Friday, said that whatever softening influences may have been at work during our long years of peace, there were never wanting men of our race to maintain our best traditions of courage and endurance. The heroism of the lonely end of Scott and his companions might in these crowded days of great opportunity, be equalled, but could not be surpassed. These were men who, before the great ordeal which, on a world-wide stage, is now testing our national manhood, showed in the dim polar twilight, without witnesses, and, for all they knew, with no record which would ever reach their countrymen, the supreme quality of self-forgetful courage and endurance.

The *Nieuwe Courant* learns from Frankfort that Prof. August von Wassermann, at present head of the Royal Institute for Infectious Diseases at Berlin, will be appointed director of the Institute for Experimental Therapy and of the Georg Speyerhaus at Frankfort, in succession to the late Prof. Paul Ehrlich.

Sir R. Havelock Charles, Serjeant-Surgeon to the King, and President of the Medical Board of the India Office and of the Society of Tropical Medicine and Hygiene, has, at the request of the Secretary of State for India, accepted an invitation to become dean of the London School of Tropical Medicine in succession to the late Sir Francis Lovell.

Announcement was made in the House of Commons on May 8 that the following had been appointed a Committee to inquire into the administration of the Royal Flying Corps:—Mr. Justice Bailhache (chairman), Mr. J. G. Butcher, M.P., Mr. E. Shortt, M.P., Mr. J. H. Balfour Browne, K.C., the Hon. Sir C. Parsons, K.C.B., and Mr. Charles Bright. A military officer of high rank is to be invited to join the Committee.

On account of the war, the council of the British Medical Association has decided to postpone as regards 1916 the holding of an annual meeting at Cambridge. In the present circumstances the council has arranged that the annual representative meeting and statutory general meeting shall be held at the Connaught Rooms, London, on Friday, July 28. In the annual report, to be presented at that meeting, the council recommends that Sir T. Clifford Allbutt be elected president of the association for 1916–17.

Under the auspices of a commission appointed by the Imperial Academy of Sciences of Petrograd, a series of monographs is being published dealing with the natural resources of the Russian Empire. No. 5 of the series (Petrograd, 1916) treats of the native sources of tungsten and tin ores. The author, P. P. Suscinskij, says that hitherto neither the mining nor the smelting of these ores has been organised on a regular basis in Russia, but that quite recently, in response to the requirements of Russian industry and of the Imperial Defence Committee, an electro-metallurgical company has been formed in Petrograd for the preparation of special kinds of steel for the Admiralty. The article concludes with an illustrated account of Russian tungsten and tin mines.

The annual meeting of the British Science Guild will be held at the Royal Society of Medicine, 1 Wimpole Street, London, W., on Wednesday, May 17, at 4.0 p.m. The chair will be taken by the president, the Right Hon. Sir William Mather, P.C., and an address will be given by the Right Hon. Andrew Fisher, P.C., High Commissioner for the Commonwealth of Australia, on "The Establishment of a National Institute of Science and Industry in Australia." Other speakers will be Sir Alfred Keogh, K.C.B., Dr. R. Mullineux Walmsley, Sir John S. Young, and Prof. J. Perry, F.R.S. On account of the public attention recently given to the relation of science to national affairs, the meeting this year will be of exceptional interest. Tickets of admission may be obtained from the secretary, British Science Guild, 199 Piccadilly, London, W.

Mr. Cornelius Hanbury, who died on April 11, in his eighty-ninth year, was the chairman of the board of directors of the well-known firm of Allen and Hanburys, Ltd. Although Mr. Hanbury had trained and qualified for the medical profession he entered the business very early in his career, and eventually became the sole proprietor. Under his able guidance rapid development took place, laboratories and other premises being established at Bethnal Green, and, after the conversion of the business into a company, at Ware also. He was cousin of the late Daniel Hanbury, whose work in connection with the natural history of drugs is recognised as classical, and also of the late Sir Thomas Hanbury, whose magnificent gardens at La Mortola, near Mentone, were the admiration of every scientific botanist. Mr. Hanbury served for some years on the council of the Pharmaceutical Society of Great Britain, acting as treasurer from 1876 to 1878.

Prof. H. P. Wijsman, whose death at Utrecht on March 19 is announced, was the son of an Amsterdam pharmacist, and studied at the Amsterdam University under Profs. van't Hoff, de Vries, and Oudemans, taking the degree of Doctor of Science in 1889. Very shortly after graduating he was appointed chemist to a yeast and spirit factory at Delft, but soon resigned this position to become professor of toxicology at Leyden University. To great versatility Prof. Wijsman added, in an unusual degree, the desire and ability to organise. He was instrumental in founding a pharmaceutical laboratory in Leyden, and in establishing an analytical bureau and an Imperial control station for milk, butter, and cheese. On his return from the Dutch East Indies, he took an active interest in the development of the celebrated Colonial Museum of Haarlem and its transference to the more central position of Amsterdam. He represented the Dutch Government at numerous scientific congresses, and attracted considerable attention at the recent International Pharmaceutical Congress at The Hague by a lecture on the cultivation of important plants in Java, which was illustrated by a series of kinematograph films. Prof. Wijsman's ability and geniality gained him many friends, and his loss will be felt by his British as well as by his Dutch colleagues.

The death of Mr. C. Lees Curties, which occurred on April 24, will be greatly lamented by a large circle of scientific men, many of whom will feel that they have lost a personal friend, as well as a notable figure in the optical world. He and his father before him had built up a unique business, and 244 High Holborn was regarded by many as a rendezvous where one was sure to meet some kindred spirit and to hear the latest scientific news. Mr. C. L. Curties greatly extended the business by the establishment of a factory where microscope stands are made, and of an optical department for the construction of object glasses. He had a thorough knowledge of the microscope (of which he was a most expert manipulator), as well as a wide and varied acquaintance with all sorts of scientific instruments, owing to the great number that was constantly passing through his hands. He was always ready to place his expert knowledge at the disposal of anyone who asked his advice. There can be little doubt that his death was hastened by the heavy strain due to extra work on account of the war, and to his persistent refusal to give himself a much-needed holiday.

We have just learned with regret that Prof. Jules Gosselet died at Lille on March 20, as the result of a chill contracted while arranging his geological collection in the University after recent disturbance by the bombardment of the city. Prof. Gosselet was born at Cambrai (Nord) on April 19, 1832, and began his well-known geological researches in the Franco-Belgian coalfield and surrounding regions in 1852. From 1865 until 1902 he was professor of geology and mineralogy in the University of Lille, and numbered among his pupils many distinguished French geologists, including his successor, Prof. Charles Barrois. From 1876 onwards he co-operated with the Geological Survey of France, and in 1888 published his classic memoir on the geology of the Ardennes. His work on the Devonian and Carboniferous rocks especially was not only of fundamental scientific value, but also touched many problems of economic geology which were of immediate importance to the community in which he lived. He was an inspiring teacher and an ideal leader of field excursions, and retained his active enthusiasm until the end. On his retirement in 1902 his friends and admirers established a Gosselet prize for geology, and placed a bust in the museum he founded at Lille, and the account of the proceedings in the *Annales de la Société Géologique du Nord* (vol. xxxi.) is accompanied by an excellent portrait of the professor. He was a foreign member of the Geological Society of London, and was awarded its Murchison medal in 1882.

THE memorandum advocating the substitution of nitre-cake for sulphuric acid in the manufacture of sulphate of ammonia, recently issued by the Ministry of Munitions, having been severely criticised, the proposal has been examined by the Sulphate of Ammonia Association. The latter body recommends makers of sulphate of ammonia to use nitre-cake as a temporary expedient for the duration of the war, subject to the following considerations:—(1) That no attempt be made to produce a salt containing less than 24 per cent. of ammonia unless special forward contracts can be made with manure mixers for lower qualities; (2) that the nitre-cake used should not contain more than 0·05 per cent. of nitric acid; (3) that the quantity of nitre-cake should not exceed 10 per cent. by weight of the acid used, except in special circumstances. If a larger quantity than 10 per cent. of nitre-cake is employed difficulties arise from two causes: first, from precipitation of sodium sulphate, resulting in the production of an irregular quality of salt; secondly, from irregular working of the bath owing to the impossibility of control without frequent titration.

SOME French anthropologists have taken the trouble to examine on scientific principles the character of the remarkable wooden Hindenburg figure which the enthusiastic German loyalists have been invited to decorate with nails of gold and other metals. In *L'Anthropologie* (vol. xxvii., Nos. 1–2, for January-April) M. R. Verneau compares them with a collection of remarkable fetishes decorated in the same way by the negroes of equatorial Africa and the adjoining regions, of which he gives a number of excellent illustrations, both animal and human. He expresses the pious assurance that the German devices will be as useless as the savage fetishes from Loando, and that it is not by the use of such methods current in the lower culture that the ultimate triumph of civilisation can be prevented.

IN the Journal of the Royal Society of Antiquaries of Ireland for December, 1915, Mr. J. J. Buckley contributes an interesting article on some early ornamented leather work. Ireland possesses many specimens of this class of work, such as the satchel which holds the famous MS., the Book of Armagh, in the library of Trinity College; that associated with the shrine called the Breac Moedóig in the National Museum; and a binding of the Life of St. Columba in the Franciscan Library, Dublin. Other satchels of the same type are preserved at Stonyhurst College and at Corpus Christi College, Oxford. There is good evidence that the Irish in very ancient times were acquainted with the use of oak bark for tanning leather, but whether this process was used in the manufacture of the material of these satchels is uncertain. The date of these specimens still remains a matter of speculation. That of the Book of Armagh was obviously not made to protect the MS., and the same appears to be the case with the specimen in the National Museum. But that at Corpus Christi College seems to have been made for the book which it covers. The satchel at Stonyhurst has been attributed to the seventh century, but Count Plunkett places it as late as the beginning of the seventeenth. In any case, the style of ornamentation is early, and it may be hoped that as we now possess in this paper excellent photographs, a further study will decide the date of a class of work which is of interest for the study of Irish art.

IN NATURE of December 30, 1915 (vol. xcvi., p. 487), appreciative reference was made to part ii. of the third volume of the monograph by Howard, Dyar, and Knab on the mosquitoes of North and Central America and the West Indies. It was remarked in the note that vol. ii., containing the illustrative plates, "has presumably not yet been published, as we are unable to trace its receipt." Dr. L. O. Howard writes to remind us that vol. ii. was issued at the same time as vol. i. (1912), and this fact is mentioned in a long review published in NATURE of June 26, 1913 (vol. xci., p. 420).

IN the *Zoologist* for April Capt. Philip Gosse contributes a brief but very welcome account of the mammals which he obtained in Flanders during such leisure moments as his duties with a field ambulance allowed him. The list is not a long one, but it contains some interesting items, among which figure some noteworthy colour variations of the water shrew (*Neomys foidens*). The black rat he found to be pretty common in the farm buildings, where it was living in company with the brown rat, a somewhat unusual occurrence. In the trenches, however, it does not seem to have been met with, but the brown rat swarms there.

ORNITHOLOGISTS owe much to Mr. Edmund Selous for the strenuous efforts he has made to secure protection, during the breeding season, for birds breeding in Iceland, the eggs of which are coveted by the egg-collector. In some cases he has only been able to achieve this end by fully compensating the local collectors for the loss of revenue they sustained by leaving the sitting birds unmolested. These efforts he describes incidentally in the *Zoologist* for April, in the course of his account of his ornithological observations made in Iceland during 1912. His efforts to keep a continuous watch on a pair of nesting eagles were frustrated by the intolerable attacks of swarms of mosquitoes, which here gathered in clouds so dense as to obscure the sun.

THE annual report of the Zoological Society of London never fails to furnish items of interest. Having regard to the anxious times through which we are passing, the report for 1915, just issued, assumes an enhanced importance, since it affords us an index both of our financial stability and our capacity for study and recreation. Though partly by deaths and partly by resignations the number of fellows of the society has been reduced by nearly a hundred, the number of visitors has been well sustained, so that the society, at the end of the financial year, finds itself in possession of ample funds. The cost of provisions has increased materially, and the council has therefore considered it prudent to decrease the stock by disposing of some animals that could easily be replaced. Apart from the cost, there has been no difficulty in obtaining the necessary supplies of food for all the animals in the Gardens, and although special endeavours have been made to replace expensive articles of diet by less costly substitutes, the normal food has been at once supplied in those cases where the health of the animals appeared to suffer.

EXPERIMENTS on the action of tobacco decoctions in destroying certain insect pests of the vine are described by Dr. Mario Topi in the *Atti dei Lincei*, xxv., (1), 5. Two varieties of grape vine were selected, and it was found that with two applications of the decoction the larvæ of Eudemis were about half as numerous on the treated plants as on the others, and those of Conchylis were slightly lower too. On the other hand, the number of damaged branches was also reduced by about 50 per cent. by the treatment.

THE heavy loss of nitrate by washing out from arable soil during the wet winter of 1915–16 is very clearly shown by Dr. E. J. Russell and Mr. A. Appleyard in the current number of the *Journal of the Board of Agriculture*. The most striking case is that of the Broadbalk dunged plots at Rothamsted, one of which was fallowed and the other cropped. During the summer the fallow plot accumulated nitrate until, by the middle of September, the top 18 in. of soil contained 170 lb. of nitric nitrogen per acre, equivalent to nearly 10 cwt. of nitrate of soda. The losses then began, and were so heavy in November and December that by February the magnificent stock of nitrate had been reduced to 50 lb. of nitrogen. This loss is equivalent to 7 cwt. of nitrate of soda, no small item at present prices. The Broadbalk fallow plot is no doubt an extreme case, but the cropped plot also suffered considerable loss. It never accumulated nitrate like the fallow plot, the maximum being 90 lb. of nitrogen per acre; half of this was lost during the winter, or as much nitrogen as is contained in 24 bushels of wheat and the corresponding amount of straw. The losses are naturally greatest on these heavily manured soils, but the fields which were not unusually well done lost about 30 lb. of nitrogen per acre. Some of the loss on the fallow plot could have been prevented by sowing mustard or other quick-growing crop in September. This could have been fed off or ploughed in, thus holding the nitrogen in less soluble form until the spring. The obvious lesson is that land which has been got into good condition in autumn should at once be sown with either the crop it is intended to carry or a catch crop.

THE Summary Report of the Mines Branch of the Department of Mines for 1914 has just been issued by the Canadian Government. This gives a brief *résumé* of the work done by this branch during the year in question, together with a preliminary report on the mineral production of the Dominion. It appears that there is a falling off in the output of nearly all mineral products and metals, the only exceptions of any importance being in the two items of pyrites and natural gas; in the former the increase amounts to 42 per cent., in the latter to only 3 per cent. The total value of the mineral production is given as 128,475,499 dollars, as against 145,634,812 dollars in 1913. The decrease is stated to be due to conditions arising from the war, owing to which many mines have either closed down or decreased their activities. It is not to be inferred that the diminution is due to any other than temporary causes.

THE Geological Survey of Great Britain has issued a memoir (price 4s. 6d.) on "The Thicknesses of Strata in the Counties of England and Wales, exclusive of Rocks Older than the Permian." The director, Dr. Strahan, has taken a large share in the preparation of this useful work of reference, which will aid teachers in drawing up correct geological sections, and will serve as a permanent guide to those who seek for water or for coal. Sketch-maps are given of each county, showing the sites where subterranean information has been obtained, and in some cases contour-lines are drawn to mark the depths below sea-level at which certain important horizons may be struck. The base of the Permian (or top of the Coal Measures) is thus included in the features shown in Nottinghamshire. The lowering of the denuded chalk surface below sea-level and the infilling of its hollows by Glacial deposits are well seen in the map of Norfolk, where the Saham Toney boring passed through 248 ft. of Glacial drift, the base of which lies more than 100. ft. below the sea. Under the head of Kent, we note that the Dover boring has penetrated 1152 ft. of Coal Measures. The depths at which coal-bearing strata have been reached in other counties, such as Cheshire and Leicestershire, will be looked on with interest by economists.

THE United States Coast and Geodetic Survey has issued a tabulated list of the geographical positions on the North American Datum, with descriptions and elevations of all triangulation stations on the coast and geodetic survey in Alabama, on the Gulf Coast in Mississippi, and on the eastern oblique arc in Louisiana (Special Publication, No. 24). The field work of the triangulation included in this publication was done between the years 1846 and 1911, and many of the original stations could not be recovered, but where possible stations were remarked. The results of the entire eastern oblique arc triangulation appeared in a previous publication in 1901 (Special Publication, No. 7). That publication, however, dealt primarily with the purely scientific problem of the determination of the figure of the earth, and only the positions of those points included in the main scheme of triangulation were published.

PROF. HILDERBRANDSSON (*Kungl. Svenska Vetenskapsakademines Handlingar*, Band 51, No. 8) gives some further results of his researches. He states that in winter the course of the meteorological elements over the part of the ocean lying between Iceland and Norway agrees with that which occurs over the north of Europe, but is in opposition to the course of the same elements over the subtropical region, the Azores to the Mediterranean. The same opposition between north and south is said to occur in North America, but inversely to the relation in Europe, so that if the winter is cold in the north of Europe, it is cold in Mexico and the United States, but mild in the south of Europe and in the north of North America. Various other relationships are given, and are supported by tables and charts. If the correlation coefficients were worked out they would not be very high, but Prof. Hilderbrandsson states that the relations are disturbed by external causes of a superior order, such as the varying heat of the sun.

SOME observations on the green ray sometimes observed at sunrise and sunset are described by G. Guglielmo in the *Atti dei Lincei*, xxv., (1), 5. The author discusses the various theories that have been advanced to account for the fact that the duration of the phenomenon may exceed the limit attributable to dispersion. He finds, moreover, that the ray is sometimes more bluish and sometimes less so. Among the various causes which may modify the effect or its duration are mentioned atmospheric absorption of the violet and indigo rays, waves in the atmosphere, and abnormal variations of density in the lower strata.

Of course, if the sun sets behind a sloping hillside, the duration may be considerably altered by this cause.

THE March number of *Terrestrial Magnetism and Atmospheric Electricity* contains a table by Mr. J. P. Ault of the values of the deviation of the compass from true north in the Bering Sea and the Pacific Ocean, determined by the magnetic survey ship *Carnegie* during her voyage from Alaska to New Zealand in the latter half of 1915. Throughout the whole of her course, which from the western side of the Bering Sea was almost directly south, the compass pointed to the east of true north by amounts varying from half a degree in latitude 45° N. to 16° or 17° at Alaska and New Zealand. The British Admiralty charts give the compass deviation too high by amounts which, in the Bering Sea, exceed a degree, and in latitudes 37°, 21°, 14°, 12°, 0° N., 15° and 45° S. are nearly a degree.

BULLETIN 609 of the United States Geological Survey deals with the fractional precipitation of some ore-forming compounds at temperatures only slightly removed from atmospheric, and in all cases below 100° C., by Mr. R. C. Wells. The experiments have been made with the object of elucidating the chemistry of ore deposition, and they have shown the order of solubility of the compounds of each of the classes investigated—sulphides, hydroxides, carbonates, and silicates. On the whole, the most interesting, and probably the most complicated, series is that of the sulphides. Soluble sulphides may act, and do act, not only as precipitating, but also as reducing agents. It appears from the results given that the concentration of the sulphide ion is so greatly affected by change of acidity that the latter is the principal factor determining the precipitation of sulphides. A mixture of two metallic salts yields, by fractional precipitation, an initial precipitate, containing the sulphides of both metals, but, as a rule, if the mixture is heated or is permitted to stand, one sulphide largely or wholly dissolves. The order of precipitation, beginning with the metal that separates first, is palladium, mercury, silver, copper, bismuth, cadmium, antimony, lead, zinc, nickel, cobalt, ferrous iron, arsenic, thallium, and manganese. Attempts to form chalcopyrite by fractional precipitation of ferrous and cupric sulphate were unsuccessful.

PAPER No. 33 of the Survey Department of Egypt, entitled "The Magnetic Survey of Egypt and the Sudan," by Mr. H. E. Hurst, embodies the results of field observations made by the author and Mr. C. B. Middleton between October, 1908, and January, 1914. Use is also made of observations taken between 1893 and 1901 by Captain (now Major) H. G. Lyons, F.R.S., and of the results obtained in the Red Sea between 1895 and 1898 by Lieut. Rössler, of the Austrian surveying ship *Pola*. The publication includes charts of magnetic declination, inclination, and horizontal force respectively. The epoch to which the observations are reduced is January 1, 1910. Helwan, where magnetographs were installed in 1907, served as base station. The area dealt with extends from Damietta, 31° 25′ N., to Wadelai, 2° 42′ N. lat.; but it is comparatively narrow, especially in the extreme south. A remarkable feature is the closeness with which the lines of equal dip—from 42° N. to 16° S.—conform to parallels of latitude. The magnetic equator crosses the Nile at about 11° N. lat. The lines of equal declination have mostly throughout the greater part of their length the same general direction as the Nile. The lines of equal horizontal force, from 0·295 to 0·350 C.G.S., seem to cross the Red Sea nearly orthogonally. The local disturbances encountered were extremely small, especially in comparison with those described by Prof. J. C. Beattie in his "Magnetic Survey of South Africa."

A COPY of the report of the secretary of the Smithsonian Institution for the year ending June 30, 1915, has been received. The report reviews the affairs of the institution, and summarises the activities of its several branches. Among the explorations and researches inaugurated in furtherance of one of the fundamental objects of the institution, which is the "increase of knowledge," we notice the clearing of fog by electrical precipitation. The fact was long ago established that all dust and fog particles in the open atmosphere are electrified and subject to dispersion or precipitation, but how to clear fog from a street, along a railway, or from the neighbourhood of a ship at sea, and to do it in a manner commercially feasible, has been a matter of study for many years. The question recently aroused fresh attention in the neighbourhood of San Francisco, through researches planned by the University of California in co-operation with the United States Lighthouse Service, and it was decided by the Smithsonian Institution to make a grant to further this investigation, which is under the general direction of Dr. F. G. Cottrell. The American Institute of Electrical Engineers has also appointed a committee to co-operate in this work. The essential element to success in scattering fog seems to be some form of electrical apparatus of very high direct voltage, with facilities for its control and ready application.

THE H. W. Wilson Company, White Plains, New York, has published a supplement to the "Readers' Guide to Periodical Literature," which forms an index to general periodicals not included in the guide. The periodicals indexed in the supplement include NATURE, the *Hibbert Journal*, the *Philosophical Review*, and others published in this country.

OUR ASTRONOMICAL COLUMN.

URANUS.—This planet is now an early morning object in the constellation of Capricornus. When its position is known it is easily visible with quite small apertures; thus on April 29 it was seen with a hand telescope of 1⅓ in. opening, at G.M.T. 3h. 34m. The dawn had then, of course, overpowered all stars in the region. On May 12 the position of Uranus will be R.A. 21h. 13·2m., declination −16° 47·6′, diameter 3·8″.

MERCURY.—On September 21 of last year Mercury passed within 1′ of Spica, and a long series of positional measures was secured at the Union Observatory, Johannesburg (Circular No. 30). The observations made by Messrs. Innes and Worssell with a 9-in. refractor possess exceptional interest, as both observers agree regarding the visibility of a small N. polar cap and an indistinct band south of it. This appears on the reproductions as a narrow dusky zone in about latitude 45°. As an index to the conditions under which the observations were made, it may be stated that the conjunction occurred six days prior to elongation, the diameter of the slightly gibbous disc being 6·2″. The data indicate that the approximate G.M.T. of conjunction was 2h. 57m. 42s., when the zenith distance of Spica would be 51° 4′ at the Union Observatory. The truncated cusp recorded by other observers may perhaps find an explanation in this Johannesburg observation.

THE LYRID METEORS OF 1916.—Mr. W. F. Denning, writing from 44 Egerton Road, Bristol, says:—Cloudy weather seriously interfered with the observa-